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ABSTRACT

The impact of word processing on students' attitudes and grades was studied using 235 students in 15 sections of freshmen composition at a large midwestern university. Students in the word-processing sections wrote and revised their papers on the Macintosh Plus using the software MacWrite. Students in the traditional sections used paper, pencils, and typewriters to compose and revise their papers. At the end of the semester, students in all sections completed a 15-item attitude scale. Results indicated no significant differences between the two modes of instruction on grades earned in freshmen composition. The analysis of the attitude scale indicated that the students in the word processing sections had a more positive attitude toward the course and the quality of the course than students in the traditional sections, perceived their instructors as better prepared, and felt they learned more. Additionally, students in the word processing sections felt that the course increased their interest in the subject matter, that they reconsidered their former attitudes to a greater extent, and that they enjoyed the class more than students in the traditional sections. Students in the word processing sections believed that the course format had inspired interest in learning to a greater degree than students in the traditional sections. The results imply that the word processing format improves attitudes toward freshmen composition. (18 references) (Author)

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# The Effect of Word Processing on Students' Grades and Attitudes Toward Freshman Composition

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Running head: EFFECT OF WORD PROCESSING

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Abstract

The impact of word processing on students' attitudes and grades was studied using 235 students in 15 sections of freshmen composition. Students in the word-processing sections wrote and revised their papers on the MacIntosh Plus using the software MacWrite. Students in the traditional sections used paper, pencil, and typewriter to compose and revise their papers. At the end of the semester, students in all sections completed a 15 item attitude scale. Results indicated no significant differences between the two modes of instruction on grades earned in freshmen composition. The analysis of the attitude scale indicated that the students in the word processing sections had a more positive attitude toward the course and the quality of the course than students in the traditional sections, perceived their instructors as better prepared, and felt they learned more. Additionally, students in the word processing sections felt that the course increased their interest in the subject matter, felt that they reconsidered their former attitudes to a greater extent, and enjoyed the class more than students in the traditional sections. Students in the word processing sections felt that the course format had inspired interest in learning to a greater degree than students in the traditional sections. Results imply that the word processing format improves attitudes toward freshmen composition.

The introduction of the computer and word processing into the classroom setting has created a new direction in research, both in quantitative and qualitative studies. The impact of word processing on the writing process has been examined at all grade levels from elementary school through college. Studies have examined the effect of word processing on revision (Hawisher, 1987; Coulter, 1986, Daiute, 1986; Harris, 1985; Daiute, 1984; Lutz, 1983), quality of writing (Hawisher, 1987; Coulter, 1986), on length (Kaplan, 1986), on patterns of social interaction (Dickinson, 1986), and on feelings toward the use of the computer for writing. While some researchers have found positive feelings toward the use of the computer (Hawisher, 1988; Haas & Hayes, 1986; Kurth, 1986, Stromburg & Kurth, 1983), others have found no significant differences in attitude between word processing classes and traditional classes (Gerlach, 1987; Greenland, 1987; Fitch, 1985; Giovannini & Miller, 1983, 1984). Still others report mixed feelings toward the use of the computer (Sommers, 1985; Teichman, 1985). Students seem to like the ease with which they are able to revise, but not having to learn the package, nor the inconvenience of equipment failure and being tied to one location.

Lansing (1984) notes that although students may have positive attitudes toward word processing or computing, this does not necessarily impact their attitude toward writing. While most studies in the

literature have focused on student attitude toward word processing using a limited number of subjects, this study focuses on the impact of word processing on student attitude toward the course and instruction and employs a larger number of subjects across 15 sections of freshmen composition.

## Methods

Two hundred thirty-five students enrolled in fifteen sections of freshmen composition at a large midwestern university served as subjects in the study. There were 105 students in the word processing sections and 130 students in the traditional sections. Students in the word processing sections and traditional sections did not differ on mean SAT verbal scores.

Classes met twice a week for 15 weeks. Seven sections of the course were taught as word processing classes and eight sections were taught in the traditional lecture format. Students enrolled for the sections during the regular registration period and were aware of the course format at the time of enrollment.

In choosing the sections for inclusion in the study, the word processing sections were matched with traditional sections that met on the same days at the same time. Three word processing sections had one day/time match, one word processing section had two day/time matches, and

one word processing section had three day/time matches. Two word processing sections did not have a match.

The course was a basic freshman composition course which was process-oriented and provided the students with instruction and practice in the writing of academic papers. Students composed and revised multiple drafts of a series of 3-5 page papers over the course of the semester in which they practiced expository writing by summarizing, paraphrasing, and comparing articles. Students were free to choose their own topics within limits. The course textbook, a collection of essays, provided impetus in the selection of topics. The final project for the course was a 6-10 page paper in which the students argued some proposition through the use of sources.

Students in the word processing sections wrote and revised their papers on the MacIntosh Plus using the software MacWrite. Students used the computer to edit and revise the exercises presented in class, and also used it for composing and revising their papers. Students had access to the computer lab 40 hours a week in addition to the time spent in class. Students in the traditional sections received the class exercises as hand-outs and used paper and pencil to edit and revise in class, and pencil and paper and typewriter to compose and revise their papers.

During the last week of the semester, instructors administered the attitude scale. Students responded as to whether they strongly agreed,

agreed, were undecided, disagreed, or strongly disagreed with each of the 15 items. Final grades for each of the students in the sections included in the study were obtained from the registrar after the close of the semester.

## Instrumentation

A five-point Likert scale consisting of 15 items was used to assess attitudes. Items sampled attitudes about the instructor and the course. A reliability coefficient of .91 was obtained for the 235 subjects on the 15-item attitude scale.

Six of the 15 items (Items 3, 4, 5, 6, 7, and 10) had been previously included in a study conducted to assess the validity of student ratings (Chase & Keene, 1979). Four of these items (Items 3, 4, 5, and 6) discriminated between high and low achievers when high and low achieving classes were identified according to the group mean on the final exam; four of these items (Items 3, 5, 6, and 10) discriminated between high and low achievers when high and low achieving individuals were identified according to their deviation from a predicted score. These data provide support for the validity of using student ratings in the evaluation process.

## Results

A hierarchical design (Kirk, 1982) was used to analyze the data. There were no significant differences between the two modes of instruction on grades earned in freshmen composition.

The analysis of the attitude scale indicates that the students in the word processing sections had a more positive attitude toward the course than students in the traditional sections. Students in the word processing sections had a more positive attitude toward the quality of the course than students in the traditional sections, $F(1, 13) = 7.70$, $p < .016$. Students in the word processing sections perceived their instructors as better prepared for class meetings $F(1, 13) = 9.54$, $p < .009$. Students in the word processing sections felt they learned more in the course, $F(1, 233) = 5.93$, $p < .016$) and that the course increased their interest in the subject more than students in the traditional sections, $F(1, 233) = 7.39$, $p < .007$. Students in the word processing sections felt that they had reconsidered their former attitudes to a greater extent than students in the traditional sections $F(1, 233) = 11.18$, $p < .001$, and had enjoyed the class more than they had anticipated $F(1, 233) = 5.42$, $p < .02$. Students in the word processing sections felt that the course format had inspired interest in learning to a greater degree than students in the traditional sections, $F(1, 233) = 6.56$, $p < .011$.

There were no significant differences between the two modes of instruction on ratings of the quality of the instructor, on the ability of the instructor to explain the subject clearly, on the instructor's enthusiasm about teaching the course, or on the instructor's ability to make the subject interesting. Additionally, there were no significant

differences between the two types of instruction on the availability of the instructor for consultation, on the appropriateness of the difficulty level of the course, on perceptions of the grading procedures as fair, and on the course format making learning easy.

## Discussion

The results of the analysis of student grades lend support to earlier findings that word processing does not improve the quality of writing. This lack of significant results may be a function of time. One semester may simply not be long enough to affect any real change regardless of how the writing was done.

Students in the word processing sections generally had a more positive attitude about the course than students in the traditional sections. They felt they learned more and tended to rate the quality of the course as higher. Additionally, they felt that they had enjoyed the class more than they had anticipated, that the course increased their interest in the subject matter, and that the course format had inspired their interest in learning.

The results on the remaining items of the attitude scale support the fact that these positive attitudes were a function of the course format rather than some other aspect of the course. Students' perceptions of other aspects of the course did not differ across the two types of instruction. Students felt the level of difficulty was appropriate, the

course format made learning easy, and that the grading procedures were fair. Students in both types of instruction felt their instructors were enthusiastic, were able to make the subject interesting, and able to explain the subject clearly. Students in both types of instruction felt that their instructors were available for outside help and rated the quality of the instructor as high. In only one area did the students in the word processing sections perceive their instructors more positively than the traditional sections. They perceived their instructors as better prepared for class meetings. This difference, however, may be due to the fact that the detail involved in teaching a word processing package may make the level of preparation necessary to teach the class more apparent than in the traditional sections.

The results obtained here are definitely encouraging in terms of the use of the computer in teaching writing. While the length of time of this study may have been prohibitive in allowing us to find differences in students' grades, the results clearly indicate the more positive attitude toward learning in those sections in which the word processor was used. This alone would be an argument in favor of the continued use of word processing for instruction in composition. Further, if increased motivation is indicative of increased achievement, future studies in which students have a longer period of time in which to practice may shed more light upon the effect of word processing on the quality of writing.

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|---|---|---|---|
| Item 1 | Overall I would rate the quality of this course as outstanding. | | |
| | Computer Section | Mean = 1.29 | S.D. = .82 |
| | Traditional Section | Mean = 1.81 | S.D. = .98 |
| Item 2 | Overall I would rate this instructor as outstanding. | | |
| | Computer Section | Mean = .99 | S.D. = .95 |
| | Traditional Section | Mean = 1.49 | S.D. = 1.01 |
| Item 3 | My instructor is well-prepared for class meetings. | | |
| | Computer Section | Mean = .53 | S.D. = .59 |
| | Traditional Section | Mean = .97 | S.D. = .78 |
| Item 4 | My instructor explains the subject clearly. | | |
| | Computer Section | Mean = .92 | S.D. = .95 |
| | Traditional Section | Mean = 1.28 | S.D. = .96 |
| Item 5 | My instructor is enthusiastic about teaching this course. | | |
| | Computer Section | Mean = .77 | S.D. = .80 |
| | Traditional Section | Mean = .72 | S.D. = .77 |
| Item 6 | My instructor makes the subject interesting. | | |
| | Computer Section | Mean = 1.11 | S.D. = .91 |
| | Traditional Section | Mean = 1.52 | S.D. = 1.01 |
| Item 7 | My instructor is regularly available for consultation. | | |
| | Computer Section | Mean = .98 | S.D. = .91 |
| | Traditional Section | Mean = .81 | S.D. = .72 |
| Item 8 | The level of difficulty of this course is appropriate for me. | | |
| | Computer Section | Mean = 1.19 | S.D. = 1.03 |
| | Traditional Section | Mean = 1.18 | S.D. = .71 |
| Item 9 | The grading procedures for the course are fair. | | |
| | Computer Section | Mean = 1.10 | S.D. = 1.01 |
| | Traditional Section | Mean = 1.39 | S.D. = 1.05 |
| Item 10 | I learned a lot in this course. | | |
| | Computer Section | Mean = 1.27 | S.D. = 1.00 |
| | Traditional Section | Mean = 1.59 | S.D. = 1.03 |
| Item 11 | This course increased my interest in the subject matter. | | |
| | Computer Section | Mean = 1.66 | S.D. = 1.11 |
| | Traditional Section | Mean = 2.03 | S.D. = 1.00 |
| Item 12 | This class caused me to reconsider some of my former attitudes. | | |
| | Computer Section | Mean = 1.40 | S.D. = 1.00 |
| | Traditional Section | Mean = 1.84 | S.D. = 1.00 |
| Item 13 | I enjoyed this class more than I had expected to. | | |
| | Computer Section | Mean = 1.47 | S.D. = 1.14 |
| | Traditional Section | Mean = 1.82 | S.D. = 1.15 |
| Item 14 | The course format made learning easy. | | |
| | Computer Section | Mean = 1.46 | S.D. = .98 |
| | Traditional Section | Mean = 1.62 | S.D. = .85 |
| Item 15 | The course format inspired interest in learning. | | |
| | Computer Section | Mean = 1.54 | S.D. = .99 |
| | Traditional Section | Mean = 1.86 | S.D. = .91 |